

First Type 1 Report to NASA

1. Title of Investigation: The Thailand Programme of the Earth Resources Technology Satellite
2. Proposal Number: SR 9620
3. Principal Investigator: Dr. Pradisth Cheosakul, Secretary-General, National Research Committee
4. Objective: The overall objective of the Thai National ERTS Programme is to evaluate the extent to which ERTS data can be applied beneficially in various sectors of the economy. Investigations in each of the following disciplines will be undertaken:

Agriculture
Forestry
Geography/Demography/Cartography
Hydrology/Meteorology
Geology
Oceanography

5. Summary of Accomplishments: Agreements have been made between the Government of Thailand and the U.S. Operations Mission to Thailand (USOM) and between USOM and the U.S. Geological Survey (USGS), Office of International Geology, for provision of a short term intensive training programme in remote sensing technology, with emphasis on ERTS applications in the six disciplines listed above, to be given in Bangkok. Initiation of training is currently scheduled for January 4, 1973. Trainees will include 42 Thai Scientists drawn from cooperating Departments of participating government agencies. A number of additional trainees, from the Mekong Secretariat and from other countries, will also attend the courses, according to present planning. Countries from which additional representation may be solicited include Laos, the Khmer Republic, and South Vietnam for the investigation of the Mekong Secretariat; and Afghanistan, Burma, Malaysia, Nepal, Sri Lanka, and Bangladesh under joint AID and ECAFE sponsorship.

Several major items of equipment required for remote sensing and for analysis of ERTS imagery will be provided by USOM. These will include a four channel multispectral aerial camera, a color reconstruction projector-viewer for use with ERTS and aerial camera images, and a zoom transfer scope for optical superposition of images and maps.

Prior to the reporting period, a group of six Thai scientists from various government agencies in different disciplines were granted six fellowships from the Food and Agricultural Organization (FAO) of the United Nations to undergo training in the techniques, technology

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and applications of remote sensing in the United States, starting from 24 April to about the end of August 1972. The major training site was at LARS (Laboratory for Applications of Remote Sensing) of Purdue University where the group learned about the basic knowledge of remote sensing, its potential applications and instrumentations involved, the use of automatic data processing system with some exercises in the actual applications, such as the 1971 Corn Blight Watch Experiment and the Apollo 9 Data. Apart from LARS, the group separately visited the Willow Run Laboratories of the University of Michigan, U.S. Department of Agriculture Experiment Station at Weslaco, Texas, the University of California, and the Statistical Reporting Service of U.S. Department of Agriculture. The group has returned to Thailand and is now actively participating in the Thai ERTS Working Subcommittee.

During the reporting period, members of this group have reported their findings to the Subcommittee and have delivered lectures and prepared papers to the FAO, USOM, the Faculty of Forestry at Kasetsart University, the Applied Scientific Research Corporation of Thailand, and the Economic and Social Planning Division of the National Economic Development Board.

An action group composed of four senior staff members of ASRCT and the USOM training project coordinator has been formed for the purpose of establishing an operational center for activities of the National Programme. An ERTS office is provided at the Secretariat of the National Research Board, which is co-located with ASRCT. The office is in a position to serve as an operational center, to coordinate activities, to provide assistance in ground truth programmes and to organize in-service training programmes. The office staff includes the Principal Investigator, Chief Investigators from various sectors, and a team of secretaries. Two lecture rooms, three to four small classrooms, and two rooms for U.S. experts required for the ERTS training programme are already reserved at Royal Forestry Department. Transportation for U.S. experts and trainees is also arranged.

6. Problems Encountered: Initiation of the USOM sponsored training programme was delayed two months from the original planned date of November 1, 1972. Delivery of ERTS-1 imagery was also delayed, the first pictures having arrived in Thailand on November 21, 1972. Although either of these events, occurring alone, would have created scheduling and reporting problems, the occurrence of both of them has simply altered the date of initiation of serious study of the imagery. All major components of the programme are on schedule at this time.

Some of the 70 mm positive transparencies received from Goddard Space Flight Center (see below) contain undesirable noise in the form of interference fringes that appear to have been introduced in the reproduction process. This may affect the quality of color images reconstructed with the viewer-projector.

- Significant Results Obtained: The first ERTS images of Thailand were received on November 21, the date of final drafting of this report. Reproduction and analysis of these images will be started in the near future, and results will be summarized in a later report. The shipment just received contained five MSS scenes, two of which include terrain coverage of Thailand. Image quality is considered excellent; it is immediately apparent that details of the coastline, water courses, and many other features readily apparent in the imagery will permit important updating and correction of available maps of Thailand.
8. Operating Procedures, Publications, Recommendations: Procedures established thus far are covered in paragraph 4. Image Descriptor Forms will be submitted when the images have been examined more thoroughly.

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